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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,313	09/10/2004	Tatsuro Kawamura	43888-333	4073

7590 12/10/2007
McDermott Will & Emery
600 13th Street NW
Washington, DC 20005-3096

EXAMINER

MUI, CHRISTINE T

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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12/10/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/507,313

Applicant(s)

KAWAMURA ET AL.

Examiner

Christine T. Mui

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10 September 2004; 28 November 2007.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-2, 5, 8-10 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-053448 to Fukushima (submitted on the Information Disclosure Statement on 09 September 2004; herein referred "Fukushima").

3. Regarding claims 1 and 5, the reference Fukushima discloses a method of achieving a reduction in measuring time in a silica gauge for water quality inspection of boiler water. A boiler water sample or the like is injected into a coloring reaction tank/absorbance measuring cell (step 1). A pump is started to inject a first reagent such as ammonium molybdate by a specified amount into the reaction tank. A coloring reaction is monitored (step 2) with time through a light source and a quantity of transmission light detector as an output value of the detector reaches a specified value (step 3), a differentiated value is down to roughly zero. At this point, the completion of coloring reaction is judged. The quantity of final transmission as given at the end of the final step is taken in as a measuring data (step 4) (see patent abstract).

4. Regarding claim 2, the reference Fukushima discloses a coloring reaction is monitored with time ($dS1/dt$) through a light source and a quantity of transmission light

detector and as an output value of the detector reaches a specified value (predetermined range), a differentiated value is down to roughly zero (see patent abstract).

5. Regarding claims 8 and 12, the reference Fukushima discloses a method of achieve a reduction in measuring time in a silica gauge for water quality inspection of boiler water. A boiler water sample or the like is injected into a coloring reaction tank/absorbance measuring cell (step 1). A pump is started to inject a first reagent such as ammonium molybdate by a specified amount into the reaction tank. A coloring reaction is monitored (step 2) with time through a light source and a quantity of transmission light detector as an output value of the detector reaches a specified value (step 3), a differentiated value is down to roughly zero. At this point, the completion of coloring reaction is judged. The quantity of final transmission as given at the end of the final step is taken in as a measuring data (steps 4 and 5) (see patent abstract).

6. Regarding claims 9-10 and 13-14, the reference Fukushima discloses a pump or the like is started through an arithmetic control circuit to automatically shift the operation to the next step by the subsequent reagent. The addition of the subsequent reagent into the cell is detected by a detector that measuring the completion of a coloring reaction that is monitored with time (see patent abstract).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima as applied to claim 1, and further in view of EP 1 096 248 to Kawamura (submitted on the Information Disclosure Statement 28 November 2007; herein referred "Kawamura").

11. Regarding claims 3-4, the reference Fukushima discloses the claimed invention except for indicating where the reaction is rendered invalid when the reaction completion has not been determined within a predetermined period of time from the start of the measurement and determine the value of $(dS1/dt)/S1$. Kawamura discloses

a means capable of enlarging the measurable concentration range of a specific component in a solution to be detected. The concentration of a solution is measured when inhibitors such as a contamination of a sample cell is introduced. Transmitted light intensities and/or the scattered light intensities of the solution to be detected before and after mixing a reagent for changing the optical characteristics of the solution to be detected attributed to the specific component are measured to obtain the concentration (range) of the specific component in the solution. The changes in the concentration with time in the output of signals from a photosensor are observed before and after mixing (S1) of the reagent from 60 seconds before mixing to 300 seconds after the mixing of reagents (see abstract, [0049] - [0056]; Figures 3 to 8 and 11-12). It is interpreted by the examiner that when the concentration of the specific component in the solution is measured, it is interpreted to be until completion or until a specific concentration has been reached. It would have been obvious to one having ordinary skill in the art at the time the invention was made to measure the concentration of the mixture and render it invalid after a specific amount of time to determine the rate of reaction to reach a specific concentration and to monitor how fast the reaction proceeds at different points of mixing. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to obtain the concentration of the solution after mixing and determine the $(dS1/dt)/S1$ as this would only take one having ordinary skill in the art to calculate the change in concentration versus time and compare it against the concentration.

12. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima as applied to claim 5, and further in view of Kawamura.

13. Regarding claims 6-7, the reference Fukushima discloses the claimed invention except for indicating where the reaction is rendered invalid when the reaction completion has not been determined within a predetermined period of time from the start of the measurement and determine the value of $(dS1/dt)/(S1-S0)$. Kawamura discloses a means capable of enlarging the measurable concentration range of a specific component in a solution to be detected. The concentration of a solution is measured when inhibitors such as a contamination of a sample cell is introduced. Transmitted light intensities and/or the scattered light intensities of the solution to be detected before and after mixing a reagent for changing the optical characteristics of the solution to be detected attributed to the specific component are measured to obtain the concentration (range) of the specific component in the solution. The changes in the concentration with time in the output of signals from a photosensor are observed before (S0) and after mixing (S1) of the reagent from 60 seconds before mixing to 300 seconds after the mixing of reagents (see abstract, [0049] - [0056]; Figures 3 to 8 and 11-12). It is interpreted by the examiner that when the concentration of the specific component in the solution is measured, it is interpreted to be until completion or until a specific concentration has been reached. It would have been obvious to one having ordinary skill in the art at the time the invention was made to measure the concentration of the mixture and render it invalid after a specific amount of time to determine the rate of reaction to reach a specific concentration and to monitor how fast the reaction proceeds

at different points of mixing. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to obtain the concentration of the solution after mixing and determine the $(dS1/dt)/(S1-S0)$ as this would only take one having ordinary skill in the art to calculate the change in concentration versus time and compare it against the concentration.

14. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima as applied to claim 8, and further in view of Kawamura.

15. Regarding claim 11, the reference Fukushima discloses the claimed invention except for indicating where the reaction is rendered invalid when the reaction completion has not been determined within a predetermined period of time from the start of the measurement. Kawamura discloses a means capable of enlarging the measurable concentration range of a specific component in a solution to be detected. The concentration of a solution is measured when inhibitors such as a contamination of a sample cell is introduced. Transmitted light intensities and/or the scattered light intensities of the solution to be detected before and after mixing a reagent for changing the optical characteristics of the solution to be detected attributed to the specific component are measured to obtain the concentration of the specific component in the solution. The changes in the concentration with time in the output of signals from a photosensor are observed before and after mixing of the reagent (see abstract, [0049] - [0056]). It is interpreted by the examiner that when the concentration of the specific component in the solution is measured, it is interpreted to be until completion or until a specific concentration has been reached. It would have been obvious to one having

ordinary skill in the art at the time the invention was made to measure the concentration of the mixture and render it invalid after a specific amount of time to determine the rate of reaction to reach a specific concentration and to monitor how fast the reaction proceeds at different points of mixing.

16. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fukushima as applied to claim 12, and further in view of Kawamura.

17. Regarding claim 15, the reference Fukushima discloses the claimed invention except for indicating where the reaction is rendered invalid when the reaction completion has not been determined within a predetermined period of time from the start of the measurement. Kawamura discloses a means capable of enlarging the measurable concentration range of a specific component in a solution to be detected. The concentration of a solution is measured when inhibitors such as a contamination of a sample cell is introduced. Transmitted light intensities and/or the scattered light intensities of the solution to be detected before and after mixing a reagent for changing the optical characteristics of the solution to be detected attributed to the specific component are measured to obtain the concentration of the specific component in the solution. The changes in the concentration with time in the output of signals from a photosensor are observed before and after mixing of the reagent (see abstract, [0049] - [0056]). It is interpreted by the examiner that when the concentration of the specific component in the solution is measured, it is interpreted to be until completion or until a specific concentration has been reached. It would have been obvious to one having ordinary skill in the art at the time the invention was made to measure the concentration

of the mixture and render it invalid after a specific amount of time to determine the rate of reaction to reach a specific concentration and to monitor how fast the reaction proceeds at different points of mixing.

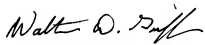
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine T. Mui whose telephone number is (571) 270-3243. The examiner can normally be reached on Monday-Friday 8-5; Alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CTM


WALTER D. GRIFFIN
SUPERVISORY PATENT EXAMINER